

# Preface

Global climate and environmental change is one of the key scientific and societal issues worldwide. The Intergovernmental Panel on Climate Change (IPCC) has published five assessment reports since 1990. The first scientific assessment report of “China Climate and Environmental Change” published in 2005. Subsequently, the first “National Assessment Report on Climate Change” in China was published in 2007 based on the results from the scientific assessment report. These two assessment reports provided important scientific basis for full recognition of China’s climate and environmental change, impacts, and adaptation, attracting much attention from scientific community, governmental agencies, policy makers, and general public as a whole.

In order to further coordinate with the international climate change assessment, synthesize the up-to-date results of climate and environmental change research, and promote the Chinese scientists’ contribution to global change science, China launched the second assessment of “Climate and Environmental Change in China: 2012,” supported by the Chinese Academy of Sciences and the China Meteorological Administration in 2008. The original plan was that the assessment in English should be completed and published in 2012, in line with the completion and publication of the IPCC Fifth Assessment Report in 2013. The Chinese version of “Climate and Environmental Change in China: 2012” was indeed published in 2012 with four volumes: the scientific basis; the impact of vulnerability; mitigation and adaptation of climate and environmental change in China; and a technical summary volume. This English version is a synthesis of the “China climate and environmental Change: 2012” with some additional background of climate, environmental, and geographic information.

This book adopts the procedures and styles of international scientific assessment on climate and environmental change. Based on the most up-to-date scientific research results from national and international literatures, the authors extracted the mainstream views and summarized the major conclusions with concessions from scientific community. All cited references are peer-reviewed articles, especially those articles published in Chinese journals which have limited availability to the

international scientific community. Based on community-recognized major datasets on conclusions, this book provides a comprehensive analysis and assessment on climate and the environment changes, and its impacts, adaptation, and mitigation measures. The aim of the “Climate and Environmental Change in China: 1951–2012” is to introduce the most up-to-date climate change research results by Chinese scientists to international community, enhancing a better understanding of progress on developments of climate change science in China and jointly dealing with the impacts of climate change worldwide.

This book consists of eight chapters. Chapter 1 provides background information on the basic characteristics of climate and environment conditions, and societal and economic developments in China. Chapter 2 introduces the observed evidence of climate and environmental change during the past six decades, followed by discussions on the causes and uncertainties of climate and environmental change in Chap. 3 and on the impacts of climate change on China’s environment, economy, and society in Chap. 4. Chapter 5 describes the projection of climate change by the end of twenty-first century and further discusses the possible implications. Chapter 6 briefly introduces the technologies and policy options on adaptation and mitigation of the impacts of climate and environmental change. Chap. 7 gives the Chinese government’s strategic plans to address climate change. Finally, Chap. 8 summarizes the key findings and important scientific understanding.

The above contents include many aspects of sciences in climate and environmental change, such as in natural, societal, economic, and human dimensions. It is the most updated and authoritative scientific assessment report on understanding climate and environmental change, impacts, adaptation, and mitigation pathways in China. I am so pleased and excited to the publication of this book in English to the world climate research community and general public at large.

There are many colleagues and experts who contributed to this book. They are from the Chinese Academy of Sciences, the China Meteorological Administration, the Ministry of Education, the Ministry of Health, the Ministry of Water Resources, the Oceanic Administration, the Ministry of Agriculture and Forestry, the Development and Reform Commission, the Ministry of Foreign Affairs, the Ministry of Finance, the Chinese society Academy of Sciences, and societal organizations. Publication of this book is a truly team effort with experts from multiple organizations and disciplines. It is a contribution by Chinese climate scientists to better understand world climate and environmental changes.

I would like to express my gratitude to all authors and contributors, reviewer experts, project office, and secretarial group for their hard work and for taking responsibilities. The State Key Laboratory of Cryosphere Science is in charge of the project office and secretary group work. The secretary group consists of Wenhua Wang, Yawei Wang, Aihong Xie, Chuancheng Zhao, Jianbin Xiong, and Fu Sha, and they all have done a lot of fruitful work. I thank Lisa Fan who has done careful work that assured the book quality.

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Due to the complexity and uncertainty of climate and environment research, errors and mistakes may have occurred as well as imperfections in the layout of the book. The editors and chapter authors look forward to comments and suggestions from the readers. Criticisms from readers are the power to improve scientific research and assessment work in future.

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